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10/019,705	05/13/2002	Kari Kalliojarvi	915-414	1802

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WARE FRESSOLA VAN DER SLUYS &
ADOLPHSON, LLP
BRADFORD GREEN BUILDING 5
755 MAIN STREET, P O BOX 224
MONROE, CT 06468

EXAMINER	
PEREZ, JULIO R	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/019,705	KALLIOJARVI, KARI	
	Examiner	Art Unit	
	Julio R. Perez	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-8, 10-12, 15, 17-24, 26-27, are rejected under 35 U.S.C. 102(b) as being anticipated by Dalley (6173186).

Regarding claim 1, Dalley discloses a method of determining a distance between a transmitting station and a receiving station comprising the steps of: determining a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of the receiving station, wherein the characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42), using means of drive test surveys around the coverage area where different cells are located or to be located, the parameter path loss may be established in order to detect the conditions surrounding the morphological area and decide on the classification for each cell placement in terms of the geomorphology of the coverage; that is, particularly prevailing features, for instance, large buildings or hills around the

test data collection sites, are taken into account; so as to classify the propagation environment that surrounds); measuring at least one feature of a signal received from the transmitting station at the receiving station, said feature being such that it can be used for determination of the distance between the transmitting station and the receiving station (col. 3, lines 43-67- col. 4, lines 1-7-col. 5, lines 1-19, 38-52; col. 7, lines 14-42, the signal strength from the mobile station may be measured in relation to its position within the morphological area); and computing the distance between the transmitting station and the receiving station using said measured signal feature and the characteristic parameter describing the line-of-sight conditions of the receiving station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7, 53-67-col. 5, lines 1-19, 38-52; col. 7, lines 14-42 the distance between base station and mobile station is determined as the path loss is determined with the measurements of the signal strengths).

Regarding claim 3, Dalley discloses, further comprising: determining at least one further distance between the transmitting station and at least one further receiving station having a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of the at least one further receiving station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); and determining the current geographical location of the transmitting station based on the determined distances between the transmitting station and said at least two receiving stations (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42; after calculating the path loss, the transmitting station position may be established).

Regarding claim 4, Dalley discloses, further comprising: determining at least one further distance between the receiving station and at least one further transmitting station having a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of the at least one further transmitting station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); and determining the current geographical location of the receiving station based on the determined distances between the receiving station and said at least two transmitting stations (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 5, Dalley discloses, wherein said at least one feature comprises at least travel time of the signal between the transmitting and receiving stations (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 6, Dalley discloses, wherein said at least one feature comprises at least signal travel time differences between the transmitting and receiving stations (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 7, Dalley discloses, wherein said at least one feature comprises at least strength of the received signal (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 8, Dalley discloses, wherein said at least one feature comprises the quality of the received signal (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 10, Dalley discloses, comprising steps of: defining the radio propagation environments for several stations; and classifying the stations in different

radio propagation environment classes; wherein the characteristic parameter is based on the class of the station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 11, Dalley discloses, wherein the data for the characteristic parameter is stored and processed in a location service node implemented in a telecommunications system (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 12, Dalley discloses, wherein the stations are connected to a mobile telecommunications system, the transmitting station being a mobile station and the receiving station being a base station of the mobile telecommunications system or vice versa (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system comprises a telecommunication system that includes mobile stations and base stations).

Regarding claim 15, Dalley discloses an arrangement for determining a distance between a transmitting station and a receiving station, comprising: storage means for storing a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of the receiving station, wherein the characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); measurement means for measuring a feature of a signal transmitted from the transmitting station to the receiving station for determination of the distance between the transmitting station and the receiving station (col. 3, lines 43-67- col. 4,

lines 1-7-col. 5, lines 1-19, 38-52; col. 7, lines 14-42, the signal strength from the mobile station may be measured in relation to its position within the morphological area); a controller for receiving the outcome of said measurement and for defining the distance between the transmitting station and the receiving station on the basis of the outcome of the measurement and said characteristic parameter (col. 3, lines 43-67- col. 4, lines 1-7- col. 5, lines 1-19, 38-52; col. 7, lines 14-42, the signal strength from the mobile station may be measured in relation to its position within the morphological area).

Regarding claim 17, Dalley discloses, comprising: at least one further receiving station having a substantially fixed location and provided with a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of said at least one further receiving station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); means for measuring a feature of a signal transmitted from the transmitting station to the at least one further receiving station for determination of the distance between the transmitting station and the at least one further receiving station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); wherein the arrangement is such that the outcome of the measurement of the feature of the signal transmitted to the at least one further receiving station is also used when determining the location of the transmitting station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 18, Dalley discloses, comprising: at least one further transmitting station having a substantially fixed location and provided with a characteristic parameter describing the line-of-sight conditions of the radio propagation

environment of said at least one further transmitting station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); means for measuring a feature of a signal transmitted from the at least one further transmitting station to the receiving station for determination of the distance between the receiving station and the at least one further transmitting station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); wherein the arrangement is such that the outcome of the measurement of the feature of the signal transmitted from the at least one further transmitting station is also used when determining the location of the receiving station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 19, Dalley discloses, wherein different radio propagation environments of different stations are classified in different radio propagation environment classes and the characteristic parameter is based on the class of the station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 20, Dalley discloses, wherein the feature of the signal is based on one or several of the following: travel time of the signal between the transmitting and receiving stations, signal travel time difference between the transmitting and receiving stations, the strength of the received signal, the quality of the received signal (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 21, Dalley discloses, comprising a mobile telecommunications system, wherein the transmitting station is a mobile station and the receiving station is a base station of the mobile telecommunications system or vice versa (col. 2, lines 6-67;

col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system comprises a telecommunication system that includes mobile stations and base stations).

Regarding claim 22, Dalley discloses, wherein the receiving station comprises a sector antenna (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system comprises a telecommunication system that includes mobile stations and base stations and the antennas may be sector antennas or Omni antennas).

Regarding claim 23, Dalley discloses a location server for use in a telecommunications system for provision of location data of a mobile station having a radio connection with at least one base station of the telecommunications system, comprising: means for receiving measurement data from the telecommunications system concerning a feature of the connection between the mobile station and the base station for determination of the distance between the mobile station and the base station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system provides means for measurement the signal strengths of cells around a coverage area, wherein the propagation environment depends on the morphological environment to include urban, suburban or rural environments); storage means for storing a characteristic parameter describing the line-of-sight conditions of the radio propagation environment of the base station, wherein the characteristic parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the measured signal strength gathered during a system drive test includes the type of environment and includes, hence, a coefficient factor, for the several types of

morphological environments); control means for defining the distance between the mobile station and the base station on the basis of the received measurement data and said characteristic parameter (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 24, Dalley discloses an arrangement in a telecommunications system for creating and/or updating data concerning the radio propagation environment of a station of the telecommunications system, comprising: a first station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system includes base stations and mobile stations); a second station for communicating by radio with the first station (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42, the system includes base stations and mobile stations); means for defining the current geographical location of the first station by means of a source of location information that is external to the telecommunications system (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); determining means for determining a feature of a radio signal received by one of the stations from the other of the stations (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42); and calculating means for calculating a parameter describing the line-of-sight conditions of the radio propagation environment by means of the determined current geographical location of the first station and the said determined feature, wherein the parameter describes excess path lengths caused by obstacles in the environment by means of one of a number of discrete levels (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 26, Dalley discloses, comprising means for determining if an update of the data concerning the radio propagation environment is required (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Regarding claim 27, Dalley discloses, wherein the first station comprises a portable device comprising the determining means for determining the feature of the radio signal (col. 2, lines 6-67; col. 3, lines 1-5, 43-67-col. 4, lines 1-7; col. 7, lines 14-42).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2,9, 13-14, 16, 25, are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalley in view of Hilsenrath et al. (6026304).

Dalley discloses the limitations of claims 1, 15, and 24.

Regarding claims 2,16, Dalley fails to explicitly disclose means of determining the current geographical location of one of the transmitting stations.

In a similar field of endeavor, Hilsenrath discloses a method and apparatus in a wireless communication system that accurately determines the transmitter's location (col. 4, lines 36-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dalley with the teachings of Hilsenrath for the purpose of having an entity that would efficiently and accurately locate the mobile station in a coverage area.

Regarding claim 9, the combination of Dalley and Hilsenrath discloses, comprising use of a weighted least square method for the determination of distances between the receiving and transmitting stations, wherein the used weighting matrix is the inverse of an error covariance matrix (Hilsenrath, col. 6, lines 6-34-col. 7, lines 9-35-col. 8, lines 15-53).

Regarding claim 13, the combination of Dalley and Hilsenrath discloses, wherein the determination of the characteristic parameter comprises steps of: determining the current geographical location of at least one of the stations by means which are external to the telecommunications system; and inputting the results of the determination to the telecommunications system (Hilsenrath, col. 6, lines 6-34-col. 7, lines 9-35-col. 8, lines 15-53).

Regarding claim 14, the combination of Dalley and Hilsenrath discloses, comprising use of a satellite based positioning system for the determination of the current geographical location of at least one of the stations (Hilsenrath, col. 6, lines 6-34-col. 7, lines 9-35-col. 8, lines 15-53; the position of the mobile station may be found with the use of the GPS, which is a satellite based device).

Regarding claim 25, the combination of Dalley and Hilsenrath discloses, comprising means for receiving signals from a satellite based positioning system

(Hilsenrath, col. 6, lines 6-34-col. 7, lines 9-35-col. 8, lines 15-53; the position of the mobile station may be found with the use of the GPS, which is a satellite based device).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio R. Perez whose telephone number is (571) 272-7846. The examiner can normally be reached on 7:00 - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph H. Feild can be reached on (571) 272- 4090. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP
7/22/05

Temica M. Beamer

TEMICA BEAMER
PRIMARY EXAMINER